

**BEEs AND THE FERTILISATION OF COFFEE.***[Concluded.]***THE EXPERIMENTS PROPOSED TO BE DONE.**

"The experiments proposed to be done are shown in a Tabular Form in an Appendix.

"The Bags referred to will be made of two kinds of material, (A) Fine Muslin, and (B) Mosquito Netting, but all will be of the same size, 4 feet by 2 feet, rectangular in shape.

"These Bags are intended to be tied around selected branches of Coffee-bushes for the various periods shown under the different experiments, to prevent pollination by particular insects at the different times quoted.

The experiments intended to be tried are:—

I. The bag to be applied before the buds open and kept applied during the whole flowering season, thus acting as a check on Pollination by (A) all insects and wind, and (B) all except minute insects.

II. The bag to be applied daily from dawn to dusk throughout the flowering season, the bag being removed and the flowers left exposed from dusk to dawn. This will act as a check on pollination by all day-flying insects (A and B).

III. The bag to be applied daily from dusk to dawn throughout the flowering season, the bag being removed and the flowers left exposed from dawn to dusk, thus checking pollination by crepuscular and nocturnal insects. (A and B).

This experiment is the opposite of II.

(The letters (A) and (B) refer to experiments with Muslin and Mosquito-net Bags respectively.)

IV. The bag to be applied daily from 7 a.m. to 5 p.m. throughout the flowering season, the bag being removed and the flowers left exposed from 5 p.m. to 7 a.m., thus checking pollination by Honey-bees chiefly (A and B).

V. The bag to be applied daily from 8 a.m. to 4 p.m. throughout the flowering season, the bag being removed and the flowers left exposed from 4 p.m. to 8 a.m., thus checking pollination by all insects flying in the hot sun (e.g., mostly butterflies, syrphids, etc.) (A and B).

VI. The bag to be applied daily from 4 p.m. to 10 p.m. throughout the flowering season, the bag being removed and the flowers left exposed from 10 p.m. to 4 a.m., thus checking pollination by crepuscular insects (chiefly, Sphingids.) (A and B).

VII. The bag to be applied daily from 8 p.m. to dawn throughout the flowering season, the bag being removed from dawn to 8 p.m., thus checking pollination by all nocturnal insects. (A and B).

*Note.*—It would have been better to have applied these bags from 8 p.m. to 4 a.m., but it would probably be difficult to get this done at 4 a.m. As a matter of fact, there seem to be very few insects about in the Hills between 4 a.m. and dawn.

VIII. Bag to be applied during the whole time that the flowers are out. The flowers of the enclosed branch to be pollinated by hand with pollen from flowers on this same branch.

IX. Bag to be applied during the whole time that the flowers are out. The flowers of the enclosed branch to be pollinated by hand with pollen from a different bush.

*Note.*—In Experiment VIII the flowers will probably be best pollinated by taking and applying the pollen on a ~~small~~ hair brush, which should be carefully sterilized beforehand by immersion in spirit.

In Experiment IX the flowers may be pollinated with a brush (as in VIII) or by shaking pollen from a branch taken from another bush. In the latter case, care must be taken that no insects are shaken on to the branch which is to be bagged.

In Experiments VIII and IX only Muslin bags will be used as the idea is to exclude pollen carried by wind. For this reason care should be taken as far as possible to pollinate by hand when the air is calm; the early morning would probably be the most suitable time if pollen is available then.

Care will have to be taken as far as possible that all branches bagged are free from insects at the time the bags are applied. Care must also be taken that the bags themselves are empty of insects when applied to the branches.

I have no information regarding any special time or stage at which the pollen grains are liberated. Possibly some of the planting community may be able to tell us about this; otherwise it will require observation to find out the proper time to pollinate by hand in Experiments VIII and IX. Some plants only liberate their pollen-grains within very circumscribed limits of time; e. g., between 4 and 7 a. m. in the case of *Hibiscus*. The times may also vary according to local conditions.

#### CONTROLS.

For a proper estimation of the results of the experiments, it is essential to have controls, i. e., branches exposed to exactly similar conditions except for the bagging. For each experiment, therefore, two similar bushes should be chosen beforehand, each having branches similar to one another as regards size, situation (exposure to sun and wind), and promise of flower; one of each of these branches will be bagged for the experiment, the other left untouched and treated as the control of the first.

#### LABELLING.

For accurate identification, at the time and afterwards, of the branches, both of those under experiment and of those used as Controls, it is essential that they be plainly labelled. It must be remembered that the actual results of the experiments cannot be ascertained until some months afterwards when the berries are full-grown. For labels I would recommend slips of smooth wood, fastened by wire on to the branches to which they relate. If the details are boldly written on both sides of the labels in pencil, they should remain legible throughout the monsoon. Wood slips about 4 inches by 2 inches, planed smooth on both sides, would be of suitable size. Thirty-two of these will be required for each set of experiments; sixty-four for each District.

As these can easily be made locally I would suggest that the Secretaries of the Planters' Associations concerned should have them ready beforehand (by 15th March), with the necessary wire for affixing.

The same number of bushes will also have to be selected in readiness beforehand and I would suggest that the Secretaries or experimenters should have this done also by the same date.

#### OBSERVATIONS OF INSECTS VISITING COFFEE-FLOWERS.

The experiments may usefully be supplemented by direct observation of the insects actually visiting the coffee-bushes whilst these are in bloom.

I propose, that in each district, a representative collection of these insects shall be made and as, for this to be done properly, continuous observation and collection from early morning until after dusk will be necessary, this work will take up one man's whole time. For this therefore, I propose to send a member of my Staff to each District; but if this is done, arrangements will have to be made for their accommodation. They would of course provide for their own food. The men I have available are two Assistants and two Fieldmen. The Assistants are Brahmins and University Graduates; the Fieldmen are both Native Christians. I shall be glad to know whether districts have any particular preference for either class of man.

Should I myself be free to visit Coorg (as proposed above) I shall propose to give my time chiefly to observation work of this kind, as a supplementary worker."

#### SUMMARY OF EXPERIMENTS.

Serial No.	Bags applied to selected Coffee-bushes.	Series		Object of Bagging.
		A (Muslin Bags.)	B (Mosquito-net Bags.)	
I.	Whole time that Flower is out ...	1	1	Check for pollination by all insects.
II.	Dawn to dusk ...	1	1	Check for pollination by all day-flying insects.
III.	Dusk to dawn ...	1	1	Check for pollination by crepuscular and nocturnal insects.
IV.	7 a. m. to 5 p. m. ...	1	1	Check for pollination by Bees chiefly.
V.	8 a. m. to 4 p. m. ...	1	1	Check for pollination by all insects flying in hot sun (e.g., mostly butterflies, Syrphids, etc.)
VI.	4 p. m. to 8 p. m. ...	1	1	Check for pollination by all crepuscular insects.
VII.	8 p. m. to dawn ...	1	1	Check for pollination by all nocturnal insects.
VIII.	Whole time that Flower is out ...	1	...	Self-pollinated by hand with pollen from some bush or branch that is enclosed in this one bag.
IX.	Whole time that Flower is out ...	1	1	Cross-pollinated by hand with pollen from a different bush.

Series A is especially to prevent pollination by all insects and wind.

Series B is especially to prevent pollination by all large insect (Honey-bees.)

## COORG

The Report on the Administration of Coorg for 1911-12 has recently come to hand and the following facts and figures are gleaned from its pages in the hope that they may prove of interest to those who only know this delightful District from hearsay and as a member, through its Planters' Association, of the U. P. A. S. I.

Everything about Coorg is interesting from its stirring history of wars and its final offensive and defensive alliance with the British which ended in the overthrow and death of Tippu in 1799, to its inhabitants, the Coorgs, in their picturesque dress, and its beautiful mountain scenery. It is a small district being only 1,583 square miles with a total length from north to south of 60 miles and from east to west of 40 miles. On the North and East for a little way the Cauvery and Hemavati rivers form the boundary with Mysore, but elsewhere it merges gradually into the Mysore tableland, while on the South a range of hills forms the boundary with Wynad. To quote the Report, "viewed from an eminence the whole of the southern portion of the country presents the appearance of one great forest. In the extreme south-eastern portion of this forest tract there is a long stretch of jungle which is deciduous in character and contains valuable teak and *honne* timber trees; further inland the foliage changes to evergreen, largely intermixed with bamboo. It is the prevalence of the latter which has given the appellation of 'The Bamboo' to the valuable tract of land, thirteen miles square, now forming in South Coorg a continuous succession of coffee estates. From Fraserpet to the west the country rises rapidly to the Mercara plateau fifteen miles away, just below which lies the large group of estates which form the Santikoppa coffee district."

"There are two main outlets to the western coast. The high roads to the ports of Mangalore and Tellicherry run through these passes, which about forty years ago were covered with dense forest. This gave place to coffee which succeeded for a few years and then failed, the rain-fall being so heavy that it washed away the soil no longer protected by the forest; the process being aided by methods of clean weeding and scraping the soil it might have been added. "Lantana, a shrub introduced in 1863, has now taken the place of coffee and has overgrown the sides of these hills turning them into an almost impenetrable bush,

Altogether there are 43,313 acres of coffee and some of it is probably the finest coffee in Southern India. During 1911-12, 4,500 tons of coffee were exported.

Mercara is the capital of Coorg, an historic town perched on the top of the hills at an elevation of 3,809 feet with an average maximum temperature of 80°6 and an average annual rainfall of 107 inches.

Coorg is famed for its Oranges, and there are 1,689 acres under this cultivation. Other crops are Cardamoms 1,972 acres, Agave 142 acres, and 4,958 acres of Rubber, chiefly Ceará which is rapidly becoming a very paying industry in this District.

The total population at the 1911 Census was 179,976, of whom 33,886 are Coorgs. This population is almost entirely dependent upon agriculture for a living. The Report states that "there are no recruiting stations in Coorg and no record is kept of emigration and immigration."

R. D. A.

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### CORRESPONDENCE.

THE EDITOR,  
*Planters' Chronicle.*

Dear Sir,—I have read with considerable interest your articles on high explosives as an aid to agriculture.

I have recently come over from Australia after spending 11 years there and can fully endorse all that is said in their favour. I have seen sour clayey country which was considered useless broken up by Gelignite or Rack-a-rock, and next season it grew the best crop in the paddock. I have also seen a country with a good, but shallow surface soil, and a hard pan underneath, broken up and excellent lucerne grown on it, which as you doubtless know is a very deep rooted plant.

Regarding shooting stumps, this is largely governed, by the class of timber. If it is good sound close grained wood and the smaller roots cut about 6 ft. away all round the stump, a shot well tamped in the tap root will nearly always bring it down, but soft wood will generally shatter just round the shot hole and nothing much else happens.

A way I found very successful for getting rid of stumps was to bore with 1" or 1½" auger a hole downwards diagonally in the stump about 6 inches from the ground and as deep as you can, then fill this hole tight with *saltpetre*. (This is very cheap compared with Explosives) and either cork it or hammer a well fitting piece of wood into it, there leave it till the following dry weather, put a little rubbish round the stump, and it will quickly light and will smoulder for weeks and in the end it will be completely burnt out, roots and all.

Of course, I speak of Australia where the rainfall is, say 22 inches. How your monsoon would effect it I don't know, but I think it would work right through just the same. It is a great mistake to try and help the fire by clearing away earth as it burns, but leave it entirely alone, or you will probably spoil the draught.

In shooting to break up sub-soil, I have always found that for the best results the ground wants to be wet, when it is dry a good deal of the force of the explosion is lost by the openness of the soil. If the cap is well soaped round the fuse, water is the best tamping I know. The relative value of gases given off by Gelignite or Rack-a-rock I don't know, but of the two, I consider, after considerable use of both, that the latter has rather a greater amassing effect.

Yours faithfully,  
(Signed) COLIN HINDLEY.

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#### REDUCTION OF SAO PAULO COFFEE LOAN.

It will interest coffee planters to read the following and to know that the valorized coffee has been diminished by 50%.

According to a telegram from Sao Paulo, the Minister of France a short time ago asked the Government of Sao Paulo to furnish him certain information regarding the varlorization loan. As a result, the Secretary of Finance has informed the Federal Treasury that the £15,000,000 (\$73,000,000) loan is now reduced to £3,417,087 (\$26,500,000).—*Simmons' Spice Mill.*

### A UNIVERSITY IN THE TROPICS.

The *Times* of January 23 devotes one of its leading articles to the important question of the need of establishing a university in the tropics for the study of tropical agriculture. The subject is dealt with in a very interesting and forcible manner and it is to be hoped that it may not be long before the proposal is realised.

At present, beyond the few facilities which exist at the Imperial College of Science and Technology there is no place within the British Dominions where men who aspire to a tropical post or have to deal with tropical estates, can learn more than a smattering of either the nature or magnitude of the problems which await solution. Yet men are constantly being sent out as agricultural officers to fill highly important and responsible posts, and they are expected to be able at once to cope with the difficulties which are presented from all sides.

Did we but stop to count the cost of our want of foresight in this matter, we should realise that the expenditure in establishing a proper training centre in the tropics would long ago have been repaid by the increase of efficiency in the officers, and the resultant improvement in agricultural operations.

The paramount advantage of a university or college of science established in some tropical colony would be that it would provide a centre where questions relating to soil, plant and animal breeding, plant and animal pathology, economic zoology and various chemical and other questions could be investigated under tropical conditions by a highly competent professional body, and where advanced instructions could be given to students—whose preliminary training had been received elsewhere—destined to fill agricultural posts in one or other of our tropical colonies. If the need of such an institution be admitted the question then arises. Where should such a university be stationed? Before suggesting an answer to this question, it is necessary to point out that in view of the two-fold nature of the proposed institution three points must be kept in mind. In the first place, it should be situated in a colony offering the greatest possible scope for diverse agricultural pursuits; secondly the healthiness of the colony should, so far as possible, be beyond reproach, and thirdly, the spot chosen for the university should be within easy access of the British Isles.

This last point is perhaps the most important one of all, since not only is it desirable on behalf of the students from home that the expenditure of time and money should not be unduly large, but also it is of paramount importance that the professors and lecturers should be able to have the opportunity of frequent intercourse with home, and so reduce to a minimum the possibility of stagnation and loss of vigour which might be liable to occur if personal intercourse with fellow-workers at home were rendered difficult by distance and expense.

This danger of stagnation would also tend very effectively to be obviated if the tropical university or college of science could be definitely linked with an institution at home. Such an institution should be either a university especially interested in agricultural matters or an institution of university standing, such as the Imperial College of Science and Technology.

If then it be agreed that the points which have been urged in considering the requirements of an agricultural institution in the tropics, must be regarded as conditions essential to its success, it would seem clear that the site for the institution must be sought in the Antilles. Nowhere among these islands do we find all the requisite conditions so fully met as in the easily accessible and beautiful island of Trinidad.—*Nature*.

## TEA.

We publish Messrs. Stenning Inskip and Co's Circular, on the subject of Firing, Packing and weighing tea, believing that much useful information is contained in a small compass. As regards marks on chests, we differ and are of opinion that the words "Pure Indian Tea" should be stencilled on to the chests as advised in our issue of February 1st, page 53.

At the commencement of the New Season, we would again draw attention to the following notes on :

## FIRING, PACKING, AND WEIGHING TEA.

**Firing.**—As freshness of smell in the leaf and briskness in the liquors are so essential, we cannot too strongly urge that the greatest care should be given to this process both in the initial and final stages. The leafy kinds as well as the broken should be thoroughly dried, at the same time leaving strength and flavour unimpaired by anything like scorching.

**Packing.** should be made of well seasoned wood, with strong triangular battens in the angles nailed to the package with nails of sufficient length to enable them to be clenched; this greatly strengthens the package and will be a preventative against loss of tea in transit. A lining of good stout tea lead is necessary.

When a thin lining of lead is used, parchment paper should be added as a further protection, and all battens should be covered to prevent their direct contact with the tea. It is also recommended that small broken fannings and dust be packed in half-chests.

**N. B.**—In the case of Dusts weighing over 110 lbs. nett and of Fannings over 120 lb. nett, nothing is recoverable from the Shipbrokers for loss in weight in transit.

As freight is charged on the measurement and not on the weight, and buyers refuse all slack packs except at a reduction in price, it is important to well fill all packages, the tea being closely filled in but not crushed.

**Factory Bulked Teas.**—In the case of garden bulked teas, care should be taken that the empty packages of any break should not vary more than 2lbs. in weight. If the variation is more than this all the packages are turned out for the purpose of taking actual tares. Great attention should be paid to the packing as (even after the most careful bulking) irregularity in the appearance of the leaf due to this having been unevenly done may necessitate rebulking in London.

**Marks on Chests.**—Nothing is wanted nor is of any service here beyond (1st) Garden Mark (2nd) Description of Tea (3rd) Garden Numbers. Gross, Tare and Nett are not of the least use, and should be discontinued.

## WEIGHING.

**Gross.**—Under the present regulations, in taking the gross weight of packages exceeding 28lbs. the Customs deduct all ounces over the even pound. Thus gross weights of 127 lbs. up to 127 lbs. 15 oz. are taken as 127 lbs.

**Tare.**—In weighing the empty package for tare, fractions of less than half a pound are ignored, but a half pound or over is taken as a full pound, thus a tare of 2½ lbs. 7 oz. is taken as 2½ lbs., one of 2½ lbs. 8 oz. or over as 2½ lbs.

*Nett.*—The nett contents of the chest are never weighed but are arrived at thus:—

	lbs. oz.		lbs.
Actual gross weight of	127 6	gives a Custom weight of	127
" tare " "	27 5	" "	27
Giving a nett of	100 1	or	100

The Gross weight should in all cases amount to a few ounces over the even pound to guard against loss in transit. If the gross were weighed to the even pound in the factory and there were a loss on the voyage of only one ounce, this would mean a loss of one pound in London. Thus a factory gross of 127 lbs. losing one ounce in transit, would give an actual weight in London of 126 lbs. 15 oz. and be taken by the Customs as 126 lbs.

The tare (that is the weight of the empty package including lid, lead, nails and hoop iron) should weigh a few ounces below the half pound.

The following are instances of how teas should turn out in London so as to avoid heavy loss:—

	lbs. oz.		lbs.
Gross ...	127 4	Customs weight	127
Tare ...	27 4	" "	27
Nett ...	100 0		100 Loss 1 lb. that is draft only.

Or,

	lbs. oz.		lbs.
Gross ...	127 5	Customs weight	127
Tare ...	27 3	" "	27
	100 2		100 Loss including draft, 1 lb. 2 oz.

And not in the following manner where the loss would be heavy:—

	lbs. oz.		lbs.
Gross ...	127 13	Customs weight	127
Tare ...	27 9	" "	28
Nett ...	100 4		99 Loss including draft, 2 lbs. 4. oz.

Or again

	lbs. oz.		lbs.
Gross ...	127 15	Customs weight	127
Tare ...	27 8	" "	28
Nett ...	100 7		99 Loss including draft, 2 lbs. 7 oz.

*Draft.*—1 lb. per package on all packages grossing 29 lbs. and upwards is allowed to the buyer.

*Dock and Warehouse Management Rates*, on packages of which the average gross of each break is as under, are:—

160/199 lbs.	130/159 lbs.	90/129 lbs.	80/89 lbs.	60/79 lbs.
2/2	1/10	1/6	1/4	1/2
	45/59 lbs.	35/44 lbs.	17/34 lbs.	
	—/11	—/10	—/6	

STENNING, INSKIPP, & Co.,

14, Mincing Lane, E. C.



**COFFEE.****French Parliamentary Report on Coffee.**

(FROM CONSUL JOHN BALL OSBURN, HAVRE.)

The Committee on Customs of the French Chamber of Deputies made a report to that body recently in regard to the proposal made by a deputy that rigorous measures be taken against the holders in France of the stock of Valorized coffee, with a view to prevent the further rise in coffee prices. This report takes up two questions: (1) Does the valorization plan constitute a monopoly calling for severe measures? (2) Is it expedient to admit into France free of import duty all coffee produced in French Colonies?

In the light of contradictory advices that it has received, the Committee hesitates to give an opinion, but inclines to the view that the principal reason for the prevailing high prices is not the valorization, but rather the increase in consumption, accompanied by small crops and the establishment in Brazil of warehouses where the planters can warrant their crops while awaiting the favourable moment for sale. But even assuming that the valorization has exerted the decisive influence on prices that is claimed the Committee does not think that this fact proves that it is a monopoly.

**VIEWS OF COMMITTEE ON VALORIZATION.**

The Committee refers to the view expressed by the Chamber of Commerce of Havre that it is to the general interest that the Government of Sao Paulo keep strictly to the engagements that it has made. On this point the Havre Chamber has declared as follows:—

"It is not only desirable, but necessary, that our commerce should know in advance the conditions on which it may count. The element of chance involved in crop prospects is in itself sufficient to up-set the best founded predictions without adding the uncertainty as to the qualities of coffee that the Government of Sao Paulo might put on the market at any moment."

It was suggested to the Committee that the regulations concerning merchandise remaining in bonded warehouse for more than three years be applied to valorized coffee. This refers to the law which requires the withdrawal of merchandise from bonded warehouses at the expiration of three years. This period, however, may be prolonged at the discretion of the customs authorities and it is understood that applications for its extension are invariably granted. In this connection the director of the principal bonded warehouse at Havre states that coffee not infrequently remains in bond as long as six or seven years.

**PROTEST AGAINST THREE-YEAR REGULATIONS.**

The Committee believes that the strict application to the three-year regulation would be a very objectionable procedure. In fact, the Chamber of Commerce of Havre has filed a protest against this proposal, since the 1,600,000 bags of valorized coffee stored at Havre would necessarily be shipped elsewhere involving a great loss to this community. The Committee concludes its report on this question as follows:—

"The study of valorization shows that we do not possess any effective weapon against the International Committee and that we have practically no means to compel it to throw on the market more coffee than it has decided to put on sale. It is the duty of the Government only to employ whatever influence it possesses with the French Members of the group to endeavour

to obtain an earlier liquidation of the stock as well as increased allotments for our markets. France has taken this year nearly one-fifth of the stock delivered for consumption, namely 226,000 bags sold at Havre and 20,000 at Marseille out of a total sale of 1,200,000 bags.

#### FREE ADMISSION OF COLONIAL COFFEE.

The proposal to admit French Colonial coffee free of all import duty is perhaps the most important feature of the Committee's report. The present duty on the colonial product is only 58 francs per 100 kilos (15 cents per pound) while coffee imported from Brazil, Porto Rico and elsewhere is obliged to pay a regular minimum duty of 136 francs per 100 kilos (11'9 cents per pound).

The Committee believes it quite impossible to take other measures than those suggested against the holders of valorised coffee in order to arrest the upward trend of prices, and it believes that the proposed free entry of French Colonies coffee would emancipate little by little, at least in part, the French market from dependence on countries which like Brazil have a sort of monopoly of production. The Committee further recognises that the problem is a difficult one since continental France can obtain from her colonies scarcely more than 2 per cent. of the quantities of coffee required for domestic consumption. The Committee does not believe there would be any immediate result seen in modification of present high prices, but it expresses the hope that the culture of coffee, if rendered more remunerative for the French Colonies will develop in such a way, that their markets increasing from year to year, will finally make themselves felt in prices and prevent the exaggerated rise in a commodity of prime necessity.

The Committee expresses the opinion that the present duty is not sufficiently low to permit the colonies to compete successfully with Brazil but that complete exemption from duty would give them a new advantage susceptible of assuring renewed economic vitality to the colonies of the first group.—*Simmons' Spice Mill.*

#### ESTIMATED BRAZIL PRODUCTION OF COFFEE THIS SEASON.

A Cablegram dated December 28, 1912, from the International Institute of Agriculture, Rome, Italy, received by the United States Department of Agriculture, stated:—

"In Brazil, the estimated production of Coffee this season is 1,322,720,000 lbs."—*Simmons' Spice Mill.*

#### RHODESIAN RESTRICTION ON POTATOS.

We learn from the *South African Agricultural Journal* that the Southern Rhodesia Government, by a regulation dated October 3, 1912, prohibits the importation of Potatos from other parts of South Africa or from over-sea, if found on inspection to be infested with the pest known as "root gall worm" (*Heterodera radiculicola*). Infested tubers will be refused admittance to Southern Rhodesia or destroyed. The root gall worm, sometimes called Potato eel worm occurs commonly in Potatos grown in most parts of the Union, and shippers of Potatos to Southern Rhodesia will need to exercise great care not to have infested tubers included in their consignments. The presence of infestation is generally indicated by nodular swellings about the size of split Peas, on the surface of the tuber, and on removing a thick peel from such tubers watery-looking spots, about the size of a pin head, are to be seen under the swellings.—(*The Gardeners' Chronicle*, January 18, 1912.)

## RUBBER.

### Rubber Pests.

The following account of Rubber Pests in Ceylon is taken from the report of the *Government Entomologist, Ceylon* :—

The large root-borer of Hevea, described and figured in the "Tropical Agriculturist" of September 1910, p. 221, appears to be growing more common in the Kelani Valley districts. Complaints of damage by this borer have come in from Awissawella, Padukka, Waga and Undugoda. One correspondent reports that a group of half-a dozen old trees has been killed by this pest. Six or seven of the grubs have been found in a single tree. The borer is a large whitish, fleshy, grub, more or less cylindrical in form, but, with the segments immediately behind the head, much broader than the others. It is the larvæ of a Longicorn beetle, but of which particular species it is impossible to say at present. Apart from the fact that most of the specimens that have reached me have been damaged in the process of extraction, it is always difficult to rear up boring larvæ when removed from their natural conditions. I have, however, planted one or two Hevea stumps (believed to contain borers) in a cage, and hope that the adult beetle may eventually appear. From the size of the grub the beetle is probably a large one, and should be a conspicuous object when resting on the stem of the tree. Meanwhile, it will be advisable for rubber planters to regard all larger Longicorn beetles with suspicion, and destroy them when found "loitering" in their rubber clearings.

The "Rubber Slug" (*Mariella dussumierii*), which was the subject of one of the R. B. G. Circulars last year, has again been reported this time from the Udagama district, where it is said to frequent the tapping wounds and to attack the shoots of young plants. The habit of imbibing latex does not appear to be confined to this single species, as I have received specimens of a small black slug of a distinct (but undetermined) species that was "found drinking the latex on freshly-tapped rubber trees" on an estate near Talawakele.

I continue to receive specimens of Scolytid beetles (allied to the "shot-hole borer" of tea) extracted from the stems of Hevea trees, and believed (by the senders) to be responsible for injury to the trees. I still believe this to be a misconception of the conditions. In every case that I have examined there have been unmistakable indications of earlier fungal disease. When the bark has been attacked by canker or any other fungus that kills the tissues, it becomes attractive to these small boring beetles which are unable to penetrate healthy laticiferous bark. What lends colour to the idea that the borers can make their way into healthy rubber bark is the fact that latex is sometimes found to be exuding from the perforation. This may be explained in several ways. Sometimes the outer layers only of the bark have been killed by the fungus. Borers will attack these spots and will attempt to drive their galleries into the deeper and as yet unaffected tissues, when they are repelled by the flow of latex. Or they may drive their tunnels too near the periphery of the diseased area and strike latex there. Another cause of bleeding may result from the separation of dead bark from the wood, leaving a cavity which often becomes filled with latex from surrounding healthy tissues. If this blister is pierced by the borers, the latex finds its way to the surface. The beetles may also penetrate bark that is temporarily devoid of latex, after which renewed activity may occur, accompanied by an exudation through the perforation. The principal species of "Shot-hole borers" that have been found in Hevea trees are *Xyleborus semiopacus*, *X. discolor*, *X. interjectus*, *X. perforans*, *Platypus solidus*, *Eccoptoporus scapinosus*, and *Cryptalus plumicræ*.—*The Ceylon Observer*,